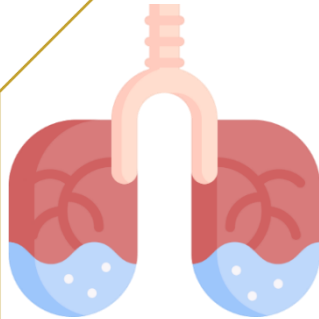




جامعة الإمام عبد الرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

مستشفى الملك فهد الجامعي
King Fahad Hospital The University

Asthma in Children



What is asthma?

It is a common **chronic disease** that affects all ages, especially children and adolescents. It affects the respiratory system, specifically the airways that is responsible for transporting air to and from the lungs. If they're blocked or narrowed, you'll have cough, difficulty breathing and wheezy chest.



Normal Bronchi



Bronchi of
asthmatic patients



Bronchi during asthma
attack

Note: Asthma attacks may disappear in some children when they get older and it may or may not recur at certain age or the disease remains with them for several years and sometimes for life.

What are the causes of asthma?

There is no main cause, but most of it is due to **genetic or environmental factors** such as pollution of the surrounding environment such as air pollution from factory smoke and car exhaust fumes.



How is asthma diagnosed?

- 1- Medical history of the patient and his family.
- 2- Clinical examination.
- 3- Measurement of lung function (for children over 5 years old).



What are the symptoms of asthma?



Coughing, especially in early morning and late night.



Wheezing (whistle) while breathing.



Difficulty of breathing (dyspnea).



Tightness or pain in the chest.

What are asthma triggers?

Asthma attacks often occur in response to an irritant which may include:

1 -Viral infections such as common cold:

It is considered as one of the most important and common irritants for asthma attacks in children as it increases inflammation in the airways, which increases asthma symptoms and can be reduced by taking the seasonal influenza vaccine.



2 -Heavy exercise:

Some symptoms of asthma attack may appear during or after heavy exercise, such as wheezing, difficulty breathing, and increased coughing.

Precautions when exercising:

- 1- Take bronchodilator) medicine about 5-10 minutes before exercising following the doctor's instructions.
- 2- Choose the right sport or exercise and a good warm-up exercise.



What are asthma triggers?

3 -Chemicals such as detergents and perfumes:

Chemical prevention methods:

- 1 -Avoid using it near the asthmatic person .
- 2 -The room must be well ventilated by opening windows and turning on fans if necessary.



4 -Climate weather changes:

Such as cold, dry air, high humidity and dust.

Ways to prevent climatic changes:

1. Avoid exposure to air currents or sudden changes in temperature.
2. Wear appropriate clothing, especially in cold days, ensure to cover the respiratory tract.



What are asthma triggers?

5- **Smoke:** smoke from cigarettes, shisha, wood, coal and incense.



Smoke prevention methods:

1. Avoid sitting with smokers.
2. Grilling should be done in open spaces
3. If it is necessary to fumigate the house, the asthmatic person should stay outside the house during fumigation.



What are asthma triggers?

6- Organs and excreta of cockroaches:

Methods of prevention:

1. Ensure the cleanliness of sinks and dining tables.

The floors should be cleaned thoroughly from leftover food.

2. Keep food tightly covered.

7- Dust mite: It is a small insect that cannot be seen with the naked eye and lives in places with high humidity.

Ways to get rid of and reduce dust mites:

1. Reducing carpets as much as possible in the house and replacing them with ceramics or something else.

2. Regular vacuuming of carpets with a vacuum cleaner, washing sheets, blankets and pillows once a week in hot water and drying them well.

3. Special mattress protectors or covers can be used when needed.



What are asthma triggers?

8 -Fungi: They grow in humid, poorly ventilated places, such as toilets.

Fungus prevention methods:

1-Ventilate and wash the wet and damaged places constantly.

2 -Turn on the exhaust fan or open the window when taking a shower.

9 -Feathers, hair or skin scabs of animals:

Such as cats, birds or dogs, and it is the second most important cause of an asthma attack, which is found in the hair, saliva and urine of cats and dogs.

Stay away from the mentioned animals if allergy is proven.

Note: Shampooing the animal is insufficient.

What are asthma triggers?



10- Pollen from trees, grass and wild plants:

It is located outside the house and may cause asthma attacks when you are exposed to it or if the windows of the house are open during the transition of seasons.

Prevention methods: Close the windows at the time of the transition of seasons.



What is the treatment for asthma?

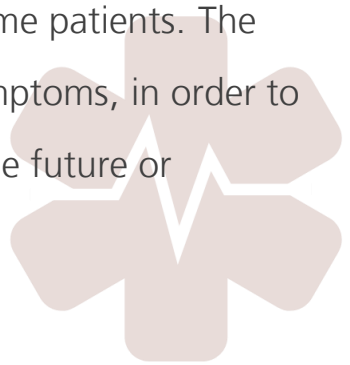
- ✓ Avoid the pharmacological management irritants.
- ✓ Asthma medications are divided into two main types:

1 -Fast-acting medications:

Salbutamol Such as ventolin, a medicine that is taken by inhalation and used as needed when asthma symptoms occur such as: wheezing, coughing, or shortness of breath. This medicine relieves these symptoms within 5-15 minutes.

2 -Preventive medication.

Such as cortisone, a drug that is taken by inhalation in which the doctor may prescribe for some patients. The patient takes it even if he is free of symptoms, in order to prevent the occurrence of attacks in the future or decrease the attacks severity.



How to use asthma medications at home?

The nebulizer and the inhalers are among the well-known methods used for asthma medications, **but the inhalers are considered as the best method** if used in the right way. The inhalers are divided into:

- A quick-acting spray like Ventolin (**blue**).
- Preventive sprays (cortisone), such as the (**orange**) and the (**Purple**) spray.



Note: You must wash your mouth after using **cortisone spray** to avoid tooth decay and the accumulation of fungi and bacteria in the mouth.



Remember! You must always use the valved holding chamber (spacer) with the inhaler to get the best result from the medicine, and the child cannot take it directly orally regardless of their experience.

What is the valved holding chamber (spacer)?

Valved holding chamber (spacer), is one of the auxiliary devices that are used for patients with the respiratory system and asthma. It has multiple shapes and colors according to the age of the child, and it is used with many inhalers to get the maximum amount of medicine in order to reach the lungs with the slightest need for the cooperation from the child and to get the best result from the medication.

Types of valve holding chamber (spacer):

1- The spacer is connected directly to the mouth.



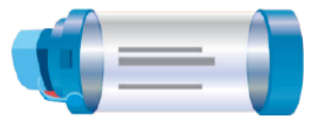
2- The spacer is shaped like a muzzle.



What is the way of using the "direct spacer to the mouth"?

(Can be used by children over 5 years old)

- 1- Remove the plastic cap from the inhaler and from the spacer.
- 2- Shake the inhaler well and then insert the inhaler into the back of the spacer.
- 3- Close the lips around the front opening of the spacer and press once on the inhaler.
- 4- Breathe in the usual way 6-8 times, then remove the spacer from the mouth.
- 5- If the doctor prescribes more than one spray, you should repeat the process in the same way.



What is the way to use?

"Muzzle-shaped spacer?"

(Can be used for children under 5 years old)

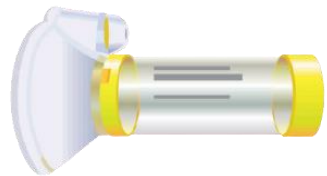
Remove the cap from the inhalers and shake well, then insert the inhalers into the back of the spacer.

1 -Put the mask of the spacer on the nose and mouth and make sure that it sealed properly.

2 -Squeeze the inhaler once.

3 -Make the child breathe through the conduction device (spacer) 6-8 times.

4-Repeat the previous steps according to the number of inhales described.

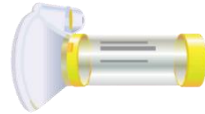


How the “spacer” cleaned?

1 .Rinse the device with water through the spray nozzle and shake the device well with water to clean it from the inside.



2 .Wash the mask well with water.



3. Leave the device to dry overnight (without wiping it with a towel or tissue).

Note: The spacer should be washed every 1-2 weeks and it is preferable to replace the connector device (the spacer) once every six months.

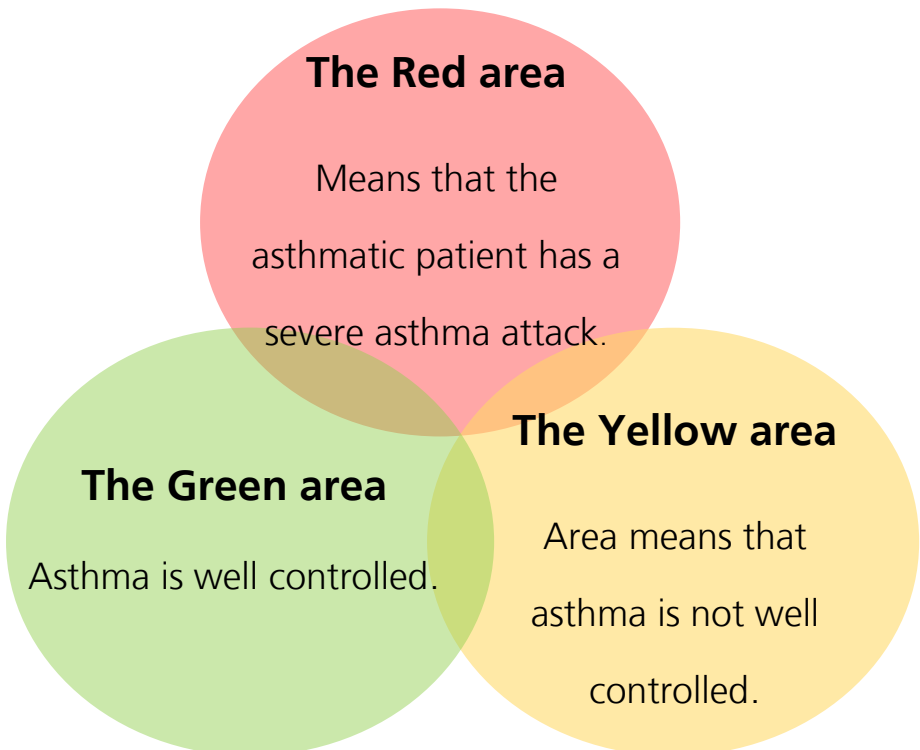
To find out how to use the Pediatric Asthma Inhaler with the Funnel, you can scan the following barcode:



How is the health status of an asthmatic patient evaluated?

There are three regions that indicate the health status of the asthma patient and how the patient's condition is handled according to each region.

The three regions are:



The Green Area

I am in good health and my asthma is under control if I:

- Breathe well.
- I can do my usual activities.
- I do not suffer from coughing, wheezing or shortness of breath.
- During the night I can sleep well, and I do not suffer from wheezing or coughing or shortness of breath.



Remember:

- ✓ Take preventive medicine daily and regularly, even you are in good health, if your doctor has prescribed it.

The yellow area

Asthma is not well controlled if you:

- Have a tightness in the chest or coughing and wheezing during breathing.
 - Cannot carry out your usual activities due to asthma symptoms.
 - Having to take sedative medicine more than usual, for example, more than three times a week.
 - Often getting up at night because of asthma symptoms (coughing, wheezing, difficulty breathing).
- ✓ You can make an appointment to visit the nearest health center or family doctor for consultation.

Danger signs

If the need increases in using the reliever medicine in more than once during four hours a day, **this is a severe asthma attack**, you should refer to the instructions in the red zone



The red area

I have severe asthma attack if I have:

- very difficult to breathe.
- Persistent coughing and wheezing, and the inability to continue speaking.
- Use the reliver medication more than once in 4 hours.
- Change the color of the lips or fingers to a blue color.

What should I do during severe asthma attacks:



Sit in an upright position, keeping as calm as possible and not being afraid.



Take reliever medication as needed, as recommended by your doctor.



Call 911 or ask your family members to take you to the emergency.

Correct some rumors



Some believe that nebulizers are the best and most effective solution when compared to inhalers.

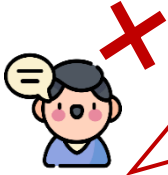
Studies have proven that inhalers are much better than nebulizers because of its advantages such as speed of use, no need for electric current and no need to store and mix treatment solutions, as well as being portable and more effective.



I have a chest allergy, not asthma.

In fact, there is no difference between asthma and chest allergy, as they are two names for the same disease and not two different diseases.

Correct some rumors



Asthma is a contagious disease that can be passed to others.

Asthma is a non-contagious disease and is not transmitted from one person to another. It is a chronic non-communicable disease, noting that respiratory viral infections (such as colds and influenza) may cause complications for an asthmatic patient and should be avoided.

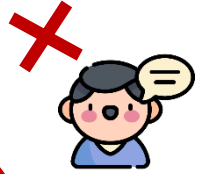
Asthma drugs are addictive in



Incorrect, and there is no reliable scientific evidence for such misinformation, which is widespread among many asthma patients and their families.

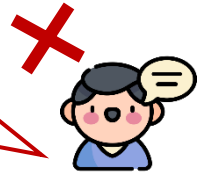
Correct some rumors

It is not recommended for a patient with asthma to exercise



If you are able to control your asthma by following your doctor's instructions, you can engage in exercise with complete freedom and experience the many health

Asthma exists and only affects children



Incorrect, asthma can be found in patients of all ages including adults and the elderly, not just children.

**Remember to take your medicine on time and
at the same dose prescribed by your doctor.**

Live well



Sources and references:

The website of MOH and the Saudi Society of Thoracic Surgery. All photos are from Flaticon.

Review and Audit:

The content of this booklet has been reviewed by consultants in the Pediatric Pulmonology unit at King Fahd University Hospital.

Department of Pediatrics

Health Awareness Department

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